

**REMARKS**

**I. Status of the claims and amendments**

After entering this amendment, claims 7, 13, 15-19, 35, and 157-163 will be pending in this application. Claims 7, 13, and 157 have been amended to place them in independent form, incorporating all limitations from the claims they used to depend. Claim 19 was amended to provide antecedent basis for the subject matter claimed therein. Support for this amendment can be found, for example, in original claims 11 and 14. Claims 158 and 159 were amended by replacing the phrase "determined characteristic peaks" by "detected characteristic peaks" in order to be consistent with the method step that recites "detecting" a characteristic peak. Analogously, isolated recitations in the claims of "determining" a characteristic peak were amended to read "detecting" a characteristic peak. Claim 158 was also amended to be consistent with the language in claim 159, reciting discretely allocating the detected characteristic peaks into one or more groups based on the assigned probability scores. Support for this amendment can be found, for example, in original claim 15. Claim 160 was amended to recite as the last step " displaying the results of the hierarchical cluster analysis." Support for this amendment can be found, for example, in paragraph [0104] of the specification. Claim 161 was amended to be consistent with the amended language in claim 160 and to delete the dependency from claim 142. Claim 162 was amended in analogous manner to claim 160. New claim 163 has been added. New claim 163 is directed to the subject matter of un-amended claim 7, corresponding to its dependency on claim 13. Claims 11, 12, 14, 33, 142, 155, and 156 are being canceled

in this application without prejudice or disclaimer. Applicants will be filing a continuation application concurrently directed to the cancelled subject matter.

**II. Allowable subject matter**

The Office objected to claims 7, 13, 15-19, 35, 157-159, and 162 for being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Office Action at 6.

Applicants have amended claims 7, 13, and 157 to place them in independent form, incorporating all of the limitations of the claims from which they depend. Thus, Applicants believe these claims are now in condition for allowance. Claims 15-19, 35, 158, 159, and 162 depend from one of claims 7, 13, and 157, and should be, therefore, also in condition for allowance.

The Office also indicated that the subject matter of claim 160 was not taught by the prior art. Office Action at 7. However, the Office objected to claim 160 for reciting a limitation without antecedent basis. Applicants amended claim 160 addressing the Office's objection in Section III below, and believe this claim is now in condition for allowance. Applicants also believe claim 161 should be in condition for allowance because it has been amended to depend from claims 13 and 160, both of which are believed to be allowable.

New claim 163 should also be allowable because it is directed to the subject matter of un-amended claim 7, when claim 7 depended from claim 13.

**III. Claim objections**

The Office objected to claims 142, 156, and 160, arguing that the recitation of displaying "the relationship" among the received diffraction patterns lacked antecedent basis.

Applicants respectfully disagree. Once there is a set of diffraction patterns, the existence of a relationship among them would be inherent, even if the displaying of such relationship indicates that there is no connection among the diffraction patterns. Nonetheless, with the sole purpose of expediting prosecution, Applicants amended the claims to recite as the relevant step "displaying the results of the hierarchical cluster analysis." Performing a hierarchical cluster analysis is a step in the claimed method and provides adequate antecedent basis for the language in the amendment. Accordingly, Applicants respectfully request that this objection be withdrawn.

**IV. Claim rejections under 35 U.S.C. § 103**

The Office rejected claims 11, 12, 14, 33, 142, 155, 156, and 161 as being unpatentable over Raich (U.S. Application Publication No. 2006/0015265 A1), in view of Mitsui et al. (Analytical Sciences, 7:941-945 (1991)), and Cullity & Stock (Elements of X-Ray Diffraction, third edition).

Applicants canceled claims 11, 12, 14, 33, 142, 155, and 156. Accordingly, this rejection is now moot with respect to those claims. The Office's argument against claim 161 was based on its dependency from claim 142. Office Action at 5. Applicants amended claim 161 to delete its dependency from claim 142. After entering the amendment, claim 161 will depend only from claims 13 and 160, which the Office

indicated contained allowable subject matter. Accordingly, Applicants believe that claim 161 is in condition for allowance and respectfully request that the rejection be withdrawn.

## **V. Conclusions**

Applicants respectfully request that this Response and Amendment under 37 C.F.R. § 1.116 be entered by the Office, placing the pending claims in condition for allowance. The proposed amendments of claims do not raise new issues or necessitate the undertaking of any additional search of the art, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Moreover, this Response and Amendment adopts the Examiner's suggestions for placing the claims in condition for allowance. Therefore, this Response and Amendment should allow for immediate action by the Office.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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